

1. (Twice Amended) Device to generate excited and/or ionized particles in a plasma from a process gas with a generator (11) to generate an electromagnetic wave, an electric coaxial conductor (30) in which the electromagnetic wave is guided, and at least one plasma zone (20) in which the excited and/or ionized particles are formed by the electromagnetic wave, characterized in that an inlet (17) is available for inlet of the process gas into an interior chamber (31) of the coaxial conductor (30) between an outer conductor (18) and a displaceable inner conductor (19), and that the inner chamber forms the plasma zone (20).

REMARKS

Claims 1-16 are pending in the application. Claim 1 has been amended to clearly define the invention.

It is noted that acknowledgement is made of Applicant's claim for Foreign Priority. However, a certified copy of the German application as required under 35 U.S.C. §119(b) has not been received by the Patent Office.

Submitted herewith is a certified copy of the Foreign Priority German application as required under 35 U.S.C. §119(b). It is respectfully submitted that all requirements have been met.

In the outstanding Office Action claims 1, 2, 11 and 12 were rejected under 35 U.S.C. §102(b) as being anticipated by Azuma et al. (JP 9-115686-A). Claim 1 was also rejected under 35 U.S.C. 102(e) as being anticipated by Selwyn (U.S. Patent No. 5,961,772).

Reconsideration and withdrawal of these rejections are respectfully requested.

The present invention as now recited in claim 1 includes a "displaceable inner conductor". An advantage of having an inner conductor that is displaceable is that since the impedance of the coaxial conductor 30 does not depend on the length of the inner conductor 19, the length of the plasma zone 20 can be changed without changing the impedance of the coaxial conductor 30 (see page 7, first full paragraph of the present application). Thus, the adjustment of the device will be especially easy as indicated on page 5, fourth complete paragraph of the present application.

Azuma et al. seems to disclose a plasma production accelerator comprising inner and outer electrodes 1, 2, which are coaxial to each other. A microwave introducing means is also provided comprising wave guides 12, 16, 17, a circulator 11, a damper 14 and a pulse microwave source 10, so a magnetic surface of CT plasma 7 is strengthened by introducing microwaves.

Selwyn discloses an atmospheric-pressure plasma jet. The plasma jet has a rod shaped electrode 14, which is located centrally in a conducting chamber 20. Gases are introduced into an annular region 18 of conducting chamber 20 through an inlet connected to gas source 16.

Neither Azuma et al. nor Selwyn disclose the feature of "a displaceable inner conductor" as now cited in claim 1, which provides the advantage of easy adjustment of the device as discussed on page 5, fourth complete paragraph and page 7, first complete paragraph of the present application. Both Azuma et al. and Selwyn are silent with respect to this feature of the present invention as now recited in claim 1.

Claims 2, 11 and 12 are ultimately dependent on claim 1. Thus, they include all the features recited in claim 1. Therefore, it is respectfully submitted that claims 2, 11, and 12 are patentable over Azuma et al. for at least the same reasons as discussed with respect to claim 1 above.

In light of the foregoing withdrawal of the rejection of claim 1, 2, 11 and 12 under 35 U.S.C. §102(b) as being anticipated by Azuma et al. and the rejection of claim 1 under 35 U.S.C. §102(e) as being anticipated by Selwyn is respectfully requested since neither Azuma et al. nor Selwyn disclose "a displaceable inner conductor" as now recited in claim 1, which provides the advantage of the easy adjustment of the device.

Claim 2 was rejected under 35 U.S.C. §103 as being unpatentable over Selwyn in view of Kawase et al. (U.S. Patent No. 5,734,143); claims 3-10, 15 and 16 were rejected under 35 U.S.C. §103 as being unpatentable over Selwyn; and claims 11-14 were rejected under 35 U.S.C. §103 as being unpatentable over Selwyn (U.S. Patent No. 5,961,772) in view of Sakudo et al. (U.S. Patent No. 4,543,465).

Reconsideration and withdrawal of the rejections of claims 2, 3 and 10-16 under 35 U.S.C. §103 are respectfully requested.

Dependent claims 2, 3 and 10-16 are ultimately dependent upon independent claim 1. It is therefore submitted that these dependent claims are patentable over the cited references for at least the same reasons as discussed above with respect to the rejection of claim 1 under 35 U.S.C. §102. In light of the foregoing withdrawal of the rejection of dependent claims 2, 3 and 10-16 is respectfully requested.

It is respectfully submitted that the application is now in condition for allowance. If it is believed that the application is not in condition for allowance, the Examiner is respectfully requested to contact the undersigned Attorney if it is believed that such contact will expedite the prosecution of this application.

In the event this paper is not timely filed, Applicants petition for an appropriate extension of time. Please charge any fee deficiency or credit any overpayments to Deposit Account No. 50-2036.

Respectfully submitted,

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Attachment:

Appendix
Claim for Priority

Date: September 10, 2002

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APPENDIXVERSION WITH MARKINGS SHOWING CHANGES MADEIN THE CLAIMS

1. (Amended) Device to generate excited and/or ionized particles in a plasma from a process gas with a generator (11) to generate an electromagnetic wave, an electric coaxial conductor (30) in which the electromagnetic wave is guided, and at least one plasma zone (20) in which the excited and/or ionized particles are formed by the electromagnetic wave, characterized in that an inlet (17) is available for inlet of the process gas into an interior chamber (31) of the coaxial conductor (30) between an outer conductor (18) and [an] a displaceable inner conductor (19), and that the inner chamber forms the plasma zone (20).